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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/155,635	07/09/99	SATO	H 48699

IM22/1110
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EXAMINER

CHANEY, C

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 11/10/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/155,635

Applicant(s)
Sato et al.

Examiner
Carol Chaney

Group Art Unit
1745



☒ Responsive to communication(s) filed on 7-9-99

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-8 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-8 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☒ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. Claims 7 and 8 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim may not depend upon another multiply-dependent claim. See MPEP § 608.01(n). Accordingly, the claims 7 and 8 not been further treated on the merits.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1-8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicants' description of "Determination of graphite material", found on page 9 of the specification does not appear to be enabled. The means in step (iv), by which particles are sorted according to their Raman spectrum characteristics, suggests Raman spectrum of individual

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particles are obtained. It is unclear how a Raman spectrum of such small samples are taken, and it is unclear how such small samples are sorted.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 2 and 4, the variable 'd' in the expression: $y \leq 4dx^{-0.6}$ is not defined and therefore the claim is indefinite.

With regards to claim 3, the half-width of a Raman spectrum peak is indefinite because it is recited as a unitless number. Thus, the magnitude of the half-width is unknown.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

8. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Omaru et al. (US Patent 5,561,005) with evidence shown by Omaru et al. in US Patent 5,639,575 and Fauteux in US Patent 5,512,392.

Omaru et al. disclose a secondary lithium battery having a graphitic anode formed from "LONZA KS 75" graphite. The graphite has a particle size of 28.4 microns, and a Raman spectrum "G value" of 8.82. (Note Omaru et al., US Patent 5,561,005, column 15, lines 50-60.) As evidenced by Omaru et al. in US Patent 5,639,575, column 7, lines 29-42, the 'G value' is the reciprocal of the 'R values' recited in applicants' claim 1; thus, the graphite disclosed by Omaru et al. in the '005 patent has an R value of about 0.11. Lonza KS 75 graphite will have a surface area of less than about 7.65 m²/g. As evidenced by Fauteux in US Patent 5,512,392, Lonza KS-series graphites show a decrease in surface area with an increase in particle size. (Note column 3, Table 1.)

9. Claims 1, 2, 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamada et al. (US Patent 5,776,610).

Yamada et al. disclose a carbon composite material for the negative electrode of lithium secondary batteries. (Note column 1, lines 65-68.) The carbon material disclosed by Yamada et

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al. contains a core of highly-crystalline carbon, and a surface layer of carbon with a “turbulent layer structure”, which is disordered. Lonza 75 graphite is used as a core material. As discussed above, this material meets the limitations of the physical properties of graphites claimed by the applicants.

With regards to claims 5 and 6, these claims recite so-called “product by process” limitations for applicants’ invention. The patentability of a product is independent of how it was made. The burden is on applicants to show product differences in product by process claims. See *Ex parte Jungfer* 18 USPQ 1796, 1800 (BPAI 1991); *Bristol-Myers Co. v. U.S. International Trade Commission* 15 USPQ 2d 1258 (Fed. Cir. 1989); *In re Thorpe* 227 USPQ 964 (Fed. Cir. 1985); *In re Best* 195 USPQ 430 (CCPA 1977). A comparison of applicants’ Examples 10 and 11, carbon materials which had no solution treatment, and applicants’ Example 16, a carbon material which had an acid solution treatment, fails to illustrate product differences resulting from acid treatment. Examples 10, 11, and 16 all have first cycle efficiencies of 92% and doping capacities of about 350 mAh/g. Therefore, although Yamada et al. do not recite an acid or alkaline treating step in the preparation of their inventive carbon composite material, the resulting product appears to meet applicants’ product limitations.

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Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takami et al., US Patent 5,753,387; Johnson et al., US Patent 5,601,951; Yamada et al, US Patent 5,595,838; Yoshino et al., US Patent 4,668,595 disclose carbon anode materials in lithium ion batteries.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol Chaney whose telephone number is (703) 305-3777. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Maria Nuzzolillo, can be reached on (703) 305-3776. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Carol Chaney
Patent Examiner
Art Unit 1745
November 6, 1999